4:Grajdanzev--87-88 S-4 (no date) 1942 Formosans
116, 167, 313, 423, 659, 177.31 Japan
636.31

"When the Japanese occupied the island, the new administration immediately became interested in its forest resources. One part of forests was in the possession of the Chinese farmers, but the other, more important one was the area of the aborigines. The Chinese were required to register the documents of ownership of forest lands, and since in most cases they had no such documents—their possession and use of forests being based on [88] custom—this device enlarged the government forest reserves (1). It has

1. This is described in Section 3, Ch. 11, p. 1 of T. Yanaihara, Teikoku Shugishita no Taiwan, pp. 23-26.

already been mentioned that in order to use the forests, formerly occupied by the aborigines, the government began to settle the latter by force in the plains. It is said that the settlement of one family of aborigines on the plains cost only ¥70, and this may be compared with the ¥1,000 or more which are spent on the settlement of a Japanese family. Many hundred thousands of ko of forest were acquired in this way."

4:Grajdanzev--138-139 S-4 (no date) 1942 Formosans-1-2
116, 563, 659, 723, 177.65 Japan
636.65

"The expenditures on the government apparatus, including police, courts, prisons, and pensions are chiefly, in some cases [139] exclusively, expenditures on the Japanese staff and for the benefit of the Japanese. All important government positions are occupied by Japanese and their salaries are much higher than those of the Chinese. Expenditures on roads, railroads, and communications, of course, benefit the local population as well as the Japanese, but as was shown in preceding chapters, these improvements are used chiefly by the Japanese or for commerce with Japan which brings little net gain to the islanders. Expenditures on ports are out of all proportion to the needs of the island. Their function is, as the Japanese openly announce, to serve as a base for the advance to the South, and such expenditures have little to do with the welfare of the islanders. Expenditures on rice control are again expenditures in the interest of Japan proper for this system has in view simply the interest of Japanese. In the war expenditures we have included expenditures on airfields, on Red Cross activities, on air defense and contributions to the war chest of Japan. These expenditures grew from the modest figure of 287,000 yen in 1935 to 21,150,000 yen in 1939; thus Taiwan contributes to the conquest of China by the Japanese. In the war expenditures should be included expenditures on meteorological stations. Their remarkable growth from 73,000 yen in 1935 to 900,000 yen in 1939 is explained not by any interest in meteorological phenomena, but by the

needs of the Japanese military aviation. Taiwan lies in the path of typhoons and information on weather conditions there is of extreme value to the Japanese forces in China."

4:Grajdanzev--139-140 S-4 (no date) 1942 Formosans
116, 648, 659, 177.72 Japan
636.72

"Expenditures for the penetration of Southern countries and [140] 'secret funds' are scarcely likely to benefit the Chinese population of Taiwan."

4:Grajdanzev--140 [2] S-4 (no date) 1942 Formosans
116, 346, 563, 659, 177.65 Japan
636.65

"The shrines and temples mentioned above are not Chinese temples, but Japanese shrines, including a shrine to the spirits of the war-dead on which 100,000 yen was expended in 1939. It may be interesting to note that construction of Japanese shrine in Taito (1937-1939) was to cost 1,078,000 yen, while the appropriations for the Chinese temple of Confucius in Taihoku (1935-1936) amounted to only 20,000 yen."

4:Grajdanzev--140-141 S-4 (no date) 1942 Formosans
116, 648, 652, 659, 723, 177.65 Japan
636.65

"The large expenditures on railways and communications, on research, on investments in the South Seas, etc., show what importance the Japanese attach to the part of Taiwan in the schemes for an advance to the South. The money [141] collected in the Taiwan budget--almost 200 million yen--is thus mainly used, on the one hand, for the construction of the all-important base for Japanese penetration in the South Seas, on the other, for the purchase of Taiwanese products to be sent to Japan (1).

1. In the last few years the Japanese government has started the practice of direct contributions by the Taiwan Treasury to the Japan's Treasury. The sum appropriated in Taiwan's budget for 1941, for example, is 24.5 million yen."

4:Grajdanzev--163 [2] S-4 (no date) 1942 Formosans
116, 171, 625, 659, 871.177.62 Japan
636.62

"Many times on the preceding pages it has been shown that Taiwan is more poorly supplied with this or that commodity than is Japan proper. But in one respect Taiwan is better supplied——with policemen. According to Dainippon teikoku nenkan (Statistical Year Book of the Japanese Empire) for 1937, there was one policeman for every 1,052 persons in Japan proper in 1937, while in Taiwan there was one for every 580 persons. According to the same source there were more policemen than teachers in Taiwan—— 9,972 policemen in 1937 as compared with 9,651 teachers of all kinds in 1936——while in Japan proper the number of teachers was almost six times as large as the number of policemen. The number of policemen in Taiwan is almost three times the number of physicians."

15: U.S. Navy --24 [5] (no date) 1944 Formosans
116, 166, 486, 659, 177.48 Japanese
636.48

"The movement of Formosan-Chinese or Japanese into the aborigine territory is supposed to be strictly regulated. Permits must be had for any forest operations which take laborers into the area for logging or for camphor extraction. Likewise, the movements of aborigines who wish to leave the territory for business or sightseeing (educational) visits to towns and villages is carefully checked by the Japanese police. The police stations are small centers for trade and local administration through which most such traffic must pass. Roads, paths and the pushcar lines converge on these centers.

Movement from the western and northern settled regions to the isolated East Coast is susceptible of complete control. The town of Suo is the last important settlement at the northeast. Koshun is the last important settlement at the extreme south. Through these two towns pass all round-the-island motor traffic. (A road crossing the southern peninsula from Shajo eastward may now cross above Koshun.) All persons entering the territory through these points are expected to be registered for police purposes.

Some foot traffic (confined largely to bearers of supplies and messengers for the interior police stations) passes across the island from the Taichu-Hori district over the Noko mountain ridge to Karenko. It is improbable that Formosan-Chinese, singly or in small groups, should attempt to cross the mountains on foot unless armed or escorted by armed police."

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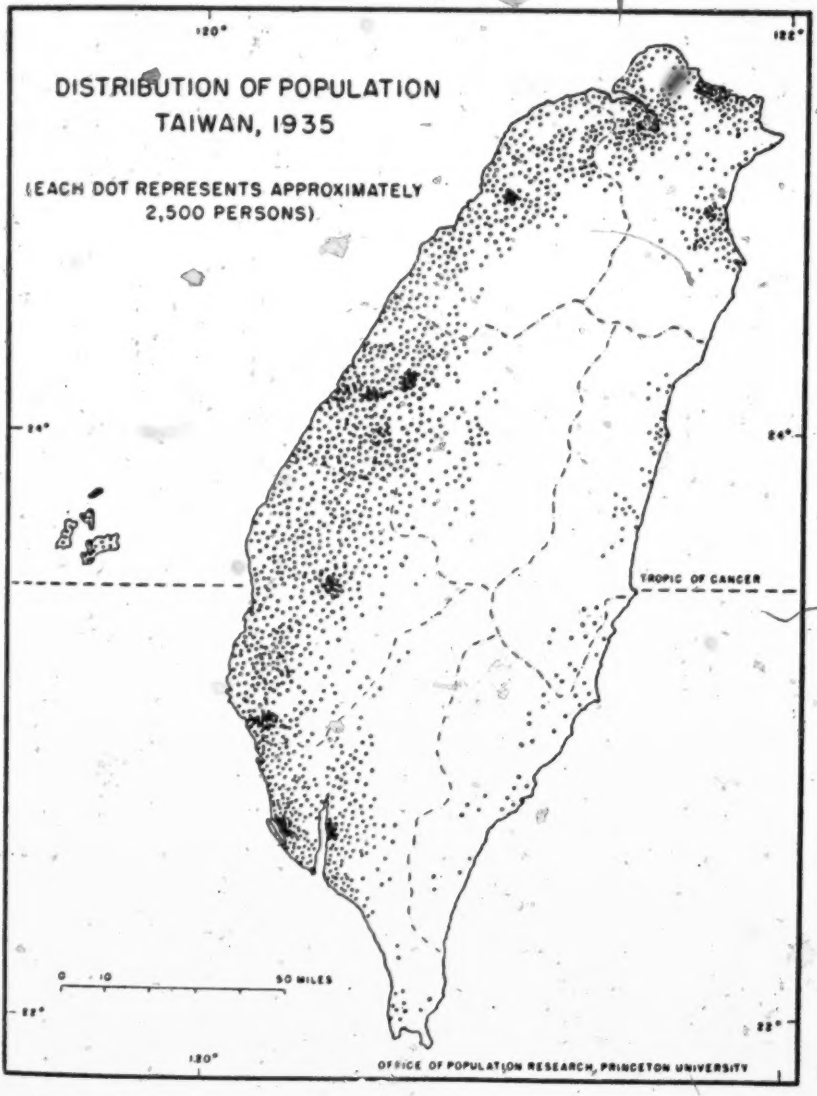

Fig. 2. Distribution of Population in Taiwan, 1935. All nationality groups.

The Japanese and Statistics of the Population

The only trustworthy information that we have about the numbers and kinds of people in Taiwan at any time is the evidence of the censuses taken by the Japanese. They conceived and established

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659 a system of collecting population data, as an integral part of their wider goals in the island. Factual materials of this order have not existed either before or since their occupation.

The complete monument to their enumerative capacities in Taiwan is a series of seven censuses, the first one in 1905, the next in 1915, and one every five years thereafter stopping with 1940. Some were more detailed and are therefore more useful than others. All maintained uniformly high standards in the completeness of reporting, in the consistency of defining ethnic classes, and in the accuracy of information such as age reporting. In these respects they often ranked in quality well above the more advanced censuses of the Western world. The first two censuses, in 1905 and 1915, were carried out before a genuine enumerative census was ever conducted in Japan Proper[5] and probably served as testing-grounds for the initial Japanese census of 1920.

One of the first official acts of the Japanese was to make a register of the population under their control. This was undertaken for purposes of regulation, and not to satisfy disinterested curiosity about the inhabitants. To judge by its published results, the early registry was incomplete, especially in its vital statistics. But the rules regarding nationality were important for later demographic data, because they provided the first basis for distinguishing ethnic groups in the population.

659 641 The authorities began by requiring all persons who acknowledged the legal status of Taiwanese "nationals" to be so documented with the police. The remaining people of Chinese origin were thenceforth classed as aliens, and were given stricter treatment before the law than the rest. This legal concept of "nationality" (*Minseki*) was unchanging for each individual over time.[6] Reflecting as it did an official system of ethnic discrimination, this scheme was maintained with some rigor by the police. The classification was extended into census practice, and the system of control later became the basis for collecting census and vital statistics data. It kept distinct four principal groups of people—"Taiwanese" (or "Islanders," as they were called until 1939 in the statistics), Japanese, Koreans, and Mainland Chinese.

[5] The Russo-Japanese War intervened in 1905, the World War in 1915. See Taeuber, Irene B., and Beal, Edwin G., Jr. (October, 1946), p. 9.

[6] The privilege of adopting Japanese nationality was extended to natives of Taiwan only in later years, and was not widely used.

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By these actions the Japanese set apart from all others those who were descended from the original residents of Taiwan. This segregation in the statistics extended from the most obvious differentiation—that of Japanese nationals—down to fine distinctions within the Taiwanese population itself.[7] It was consistent in both the population censuses and vital statistics, making it possible to amalgamate the two systems of record-keeping continuously as long as they were maintained.

TABLE 1

TAIWANESE BORN OUTSIDE OF TAIWAN, 1920 AND 1930

Proportion of All Persons Who Have Been Born "Abroad," by Age and Sex

	Census of 1920		*Census of 1930*	
	Male	*Female*	*Male*	*Female*
All ages	0.2	0.1	0.1	0.0
0-9	0.0	0.0	0.0	0.0
10-19	0.0	0.0	0.0	0.0
20-29	0.1	0.0	0.0	0.0
30-39	0.1	0.0	0.0	0.0
40-49	0.5	0.1	0.1	0.1
50-59	1.3	0.2	0.3	0.1
60-69	1.9	0.3	0.8	0.1
70 and above	2.6	0.7	1.0	0.3

Sources: *Census of 1920, Descriptive Report with Appendix*, Table 79.
Census of 1930, Statistical Tables, Table 55.

Regulating the conduct of "alien" Chinese nationals in Taiwan was not the sole purpose in establishing the legal status of residents. The authorities also set out to halt the further migration of people from the mainland. In this they were apparently successful. Taiwanese were required to verify their nationality by certain proofs, chief of which was evidence of having been born in Taiwan. Taking this as a criterion, there seems to have been little admixture from the mainland to the category of "Taiwanese." For example, tables showing Taiwanese who were born "abroad" were published with the censuses of 1920 and 1930. If the information was accurate, practically the entire population of Taiwanese born after 1895 was ac-

[7] This fine detail was confined to a slightly different classification, based on "race." It provided categories within the group with Taiwanese nationality—aborigines, Taiwanese of Fukien origin, and Taiwanese of Kwangtung origin. The two classifications were not precisely the same, the one based on "nationality" being the more consistent at different times.

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659 tually born in Taiwan (see Table 1). Almost none under 25 years
167 of age in 1920, or under 35 in 1930, were recorded as having been
born outside. Some who were older at these two dates had been
162 born in China, but they were very few and were probably living in Taiwan at the time of annexation. These figures imply that migration after 1895 was probably confined to people who were appropriately registered by nationality, and counted as *aliens* in census enumerations.[8]

Hence the census category of "Taiwanese" was defined so as to exclude migrants to and from the island. This is significant to know, for it means that Taiwanese counted in any census after 1905 were exactly the survivors of those who had been counted before (plus those who had been born in the meantime). It also means that the population of Taiwanese was for statistical purposes a "closed" population—one which neither gained nor lost people by migration. All change in the size of the Taiwanese population was therefore due to "natural increase," or the balance between births and deaths. One can thus speak precisely of population "growth" in Taiwan, without reference to migration as a complicating factor.

Half a Century of Rapid Growth

161 The total population, and the sub-total of Taiwanese, are shown in Table 2 as counted on October 1 of each census year, along with the annual geometric rates of growth that are implied at each intercensal stage. Every year showed an increase. The only setbacks were between 1915 and 1920, when the island suffered three near-epidemic attacks of disease. Even over this relatively poor span the average yearly rate of increase was close to one per cent. The original population of 1895 was more than doubled by 1945; when the vital statistics were discontinued in 1943, there were nearly six million Taiwanese.

[8] By evasion of the law some Chinese might conceivably have slipped into Taiwan and passed themselves off as Taiwanese. A further acquaintance with the regulatory system in later chapters, however, will make this appear most unlikely.

There is evidence of another sort that the Taiwanese were not diminished by removals to the mainland. Briefly, detailed testing of the validity of birth and death statistics has shown that practically all persons born in Taiwan were later accounted for in a census enumeration, or as registered deaths if they failed to survive. Practically all who were enumerated in one census were similarly accounted for at later dates. During the 1930's, Japanese permitted small numbers of Taiwanese to leave the island for special purposes. The effect of these departures was very small, and raises no difficulty in dealing with the data of earlier years. Thus, if there was emigration, it too was clandestine and very small.

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Japanese government officers could be stationed over the island to establish political order firmly.

This delay in extending their mastery over the whole of Taiwan was a disappointment to the Japanese. It spurred them to concentrate their efforts at organization on measures other than force to bring the inhabitants under control. Once set in motion after some three years' experiment and delay, their methods brought swift results. They encircled and isolated the aboriginal tribes in the hills, and introduced a refinement of old Chinese forms of keeping local order—the so-called *pao-chia* system.[10]

Private Corporations and Japanese Investment

Other measures followed to make the Japanese rule more effective. As the exercise of authority became more a matter of routine, the policy turned more and more to exploring improvements and enlargements of production. This progress in government can be traced in the annals of specific achievements, like the drive to raise rice yields[11] and the public health program. By 1905 the Government-General felt itself well enough established to take a detailed census of the population; the descriptive report of its procedures is the best evidence of a firm degree of control and competence in performing complicated administrative tasks in Taiwan.

For the next 25 years or more, until they began to shift their energies to preparation for World War II, the Japanese proceeded to work out their policies for Taiwan (outside of the Aborigine Territory) with scarcely a serious check.[12] This long interlude between two periods of tight regulation is sometimes known as one of official "liberalism" or laissez-faire toward business affairs. It can be so designated, however, only in contrast to the strictness that preceded and followed. In steady succession the government completed several major projects. It finished the land survey of the entire island, essential to all their later engineering works as well as to the desired

[10] The *pao-chia* system was a scheme for assigning joint responsibility to village and familial groups for the conduct of their members. Its operation and the reasons for its effectiveness are taken up in the following chapter.

[11] Mendiola, N. B. (1949), p. 76 ff.

[12] The Taiwanese efforts at insurrection, as for example recounted in OPNAV, Civil Affairs Handbook (1944), pp. 173-177, tended to be exaggerated by their instigators. Due to their own clumsiness, these were quickly put down by the Japanese, though not without some local disruption. Inside the Aborigine Territory, on the other hand, the Japanese devoted many years of hard fighting and frustration to "pacification," and did not hold the entire island securely until the mid-1920's, nor peacefully until almost 1940.

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"ECONOMIC DEVELOPMENT" IN TAIWAN

Industrial Growth during the War

722 After setting the stage for limited industrialization by their treatment of large business in Taiwan, Japanese leaders after 1940 began actively to move the players. The centralized corporate structure had been expected to be adequate preparation for most of the demands of war. The Government-General made frantic last-minute attempts to expand specific fields in which Japan itself was short, particularly aluminum and coal. But before long the subordination of Taiwan's economy to heavy industry in Japan, which had seemed so satisfactory, turned out to be a source of weakness. Naval losses started to interfere with shipping between Japan and Taiwan. Many of the small but essential items supplied from the home islands (special equipment, replacement parts, fuels, and skills) became unobtainable. Certain large imports such as fertilizer were cut off.

None of these shortages was fundamentally important for the island itself, since food was sufficient for its population and little else had previously been imported. Lack of articles of the first sort did play havoc with some of the new industrial output, and caused much of the equipment to deteriorate. Exports of aluminum and coal slowed down to a trickle by 1944, and practically all shipping to Japan—even rice and sugar—was discontinued early in 1945.[29] By the time of Japan's surrender much of the highly organized economic life had come to a stop, but Taiwan suffered no devastating damage as a result of the war. Agriculture was still conducted as usual, except that without fertilizer and other accustomed capital the yields had fallen off substantially.

Accomplishments of Japanese Colonial Policies

648 Having described the workings of colonial administration in Taiwan, one should have some idea of its accomplishments before going
659 on to discuss in later chapters its consequences in the lives of the Taiwanese. For this purpose, the abundance of records kept by the Japanese is often a hindrance rather than a help. In general the economic statistics are not up to the standards of the population data. Numerical tables are plentiful, but explanations of what the numbers mean are not. They disagree from source to source, seldom with any reason given for the discrepancies. One must therefore look for summarizing measures, and not for fine detail.

[29] See Cohen, J. (1949), pp. 154-156.

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fluctuations in employment. If employment is to be regarded in this way, it needs a set of criteria that are more complex, more sensitive to particular circumstances, and better oriented to the activities of people at a given moment.

Census Procedures in Taiwan for Determining the Working Population

Even if the conceptual questions can be settled, there remains a group of procedural ones. Since information which might be used to measure the size of the labor force must cover the entire population, it is ordinarily secured as part of a general census enumeration. Consequently most of the issues in collecting such materials are encountered in connection with census administration, and they have usually been dealt with by official organs charged with managing a census. Until very recently, it has been in this procedural realm that most attention has been given to labor force measurement—how to establish definitions, etc.

In actual experience, some of these criteria of working status have always been incorporated into census data that are already collected and published. They are beyond the control of the persons who make use of the materials, who are as a rule not the same ones who gathered and compiled them. Most of them must be accepted as they are, save for slight alterations (like shifting or combining certain categories) which may or may not aid in comparing data from different sources. Often the best that can be done is to scrutinize carefully the standards that were used in any given instance, and to make whatever allowance is possible for peculiarities that may exist from case to case.

In Taiwan, where census practices in Japan were followed,[2] the first of the two concepts of employment was used with little variation from census to census. Some specific entry as to "principal occupation" or customary activity was required of each individual. This left it up to each person or household head to decide whether he held an occupation; if so, he was supposed to specify the usual activities that he actually performed, as distinct from the part of the economy in which the work was carried on.[3] The information was compiled

[2] The enumerations of 1905 and 1915 in Taiwan had been planned likewise to synchronize with Japan in every major respect, but were carried out actually without the intended counterparts in Japan Proper.

[3] That is, in the current census usage of the terms, the enumerations were "occupational" rather than "industrial." The compilation of occupational titles before 1930,

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659 in detail, and transmitted to the central office, where it was reduced to groups of occupations by clerks. Here strict instructions were issued to ensure that the procedure of classification was uniform and consistent.[4]

The authorities were anxious to impress the outside world and their own superiors in Tokyo with their efficiency as a colonial government, and spared little trouble to prepare census reports that were documents of their competence. Thanks to elaborate and often exaggerated care in these matters, there is some possibility of checking on the modes of allocating people among groups of occupations. Every occupational census was published with at least one detailed tabulation showing the separate occupations of which the broader categories were composed. In 1905, for example, the census recognized 178 specific occupations. The number rose in the revised lists that appeared in later censuses, until some 376 were taken into account by 1930.[5] In fact, the zeal to gain stature for their work alongside the most modern Western enumerations carried Japanese census authorities still further. They prepared comprehensive glossaries of occupational titles to standardize the content of all categories that were tabulated. These translations contained up to several thousand names of occupations current in different dialects, and reconciled local usages with each other and with their conventional equivalents in Japanese.

It is not so clear how persons who had occupations were distin-

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while designed to classify occupational roles as such, tended to group together many persons with different functions who worked in certain lines. For example, workers in retail stores selling a particular article, regardless of whether they were owners, hired sales persons, peddlers, or simply helpers, were often placed in a single group. The census of 1930 included a stricter classification of occupations, and introduced for the first time in Taiwan a separate "industrial" tabulation of occupied persons. With one or two exceptions explicitly noted, the former of these will be used throughout this study. It is the most nearly comparable from one time to another, and provides a more useful type of information for our purposes.

[4] For a short account of the administration of these measures in Japan in 1920 and 1930, see Taeuber, Irene B., and Beal, Edwin G., Jr. (1946), pp. 9-15. The execution of the census of 1905 is described in more detail in a descriptive report translated into English as *The Special Population Census of Formosa, 1905* ([Taiwan], Government of Formosa, Tokyo, 1909).

[5] The number of occupations included in any of these lists is in itself an important detail. Very likely the systems of classification were developed beyond the degree of specialization in the economy itself. This is especially true in the later years, for the occupational scheme was devised for use in Japan and transported bodily to Taiwan as part of the policy of coordinating their census practices. While useful in locating certain specific types of activities, these minutiae are relevant chiefly as evidence of the meticulous attention to detail in the compilation of the materials.

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guished from those who did not. There were few rules covering this point. Once a person reported some employment on his census schedule, he could be assigned to an occupational class very simply by the central coding staff. But it was not easy, in terms of a "customary occupation," to control the basis on which a person might decide whether he was employed at all. The criteria for making this distinction ultimately rested on prevailing social standards of what constituted employment.

No society is lacking in definition of its own of what is useful and what is not, though the particular objects of such evaluations may vary widely from place to place. But as surely as standards of usefulness are universal among different peoples, census agencies likewise will inevitably tamper with them in the course of their duties. There is some practical necessity for this. These cultural definitions are not often explicitly formulated, nor are they consistent for all individuals in a society. Both clarity and uniformity need to be stressed in an occupational census, and so certain conventional rules are always established. The virtue of a notion such as "customary" occupation in use—and its greatest weakness—is that it serves well with little overt supervision. Hence, while an occupational inventory along these lines can be a simple matter, some of its basic categories are necessarily indistinct.

This type of inexactitude creates "fringes" of employment, especially among groups of people who are just entering or retiring from the labor force. Here are found the individuals whose exact occupational status would have to be decided on more explicit standards if all entries were to be made consistent. Customary occupations are generally suspected of being *inflated*, of retaining people who are temporarily out of work or who have retired from active work.[6]

The only procedure that census officials in Taiwan adopted to control this tendency was to specify carefully the circumstances for reporting *no occupation*, in order to settle the doubtful cases from this side. The "no-occupation" category thus had the most positive definition of all. All persons not reporting a regular occupation were required to state in detail their means of support.[7]

[6] Against this can possibly be set an honorific value, unusually strong in a Chinese society, that accrues to *leisure* activities, which may tend in the opposite direction.

[7] If living on income, the type of income was to be stated; if a family worker, the type and family status was to be included; for "dependents"—those for whom no separate source of income could be found—it was to be noted whether students, family

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In publication, except for some special tables on households, this information was usually lumped into one single class ("no-occupation"). The census of 1930 was the one exception, when the census authorities tried to be more precise about all occupations than before. In that year the following separate types of status were tabulated as sub-classes of the major group "without occupation": those living on securities, living on tenant fees, living on house and land rents; students, "dependents," inmates of special institutions, persons on relief, prisoners, others and those whose occupations were not reported, and domestic servants.[8]

This policy towards the listing of all non-employed statuses should be kept in mind when interpreting occupational figures for Taiwan. It furnishes the only definite clue that we have of the boundary that was drawn to set off the labor force as a whole. The precautions taken to prevent the "no-occupation" category from being a repository for borderline cases may even have helped in exaggerating the amount of actual employment. Hence, while census data may give good evidence on the kinds and patterns of employment in Taiwan, they are not free from bias in indicating the total amount.[9]

Variation by Age and Sex

There is no way to clarify the meaning of data on occupations without investigating the purposes and problems of census-taking. But there are limitations. The outcome of these compilations depends also on how well the planning and execution of the censuses were adapted to the circumstances they were supposed to describe.

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members, or other relationship to the household, and the occupation of the head of the supporting household.

[8] It has been necessary to reassign domestic servants arbitrarily to the "no-occupation" class. So few were enumerated that the category is meaningless, especially with reference to males.

[9] On conceptual grounds, there is not much reason to endow the "amount" of employment with much importance, for in demographic data one has to deal with units of persons and not of work. It is well known that a certain amount of temporary or partial unemployment is chronic in agrarian societies; it is taken for granted, expected, and institutionalized in some "hidden" form. Properly speaking, this is not unemployment at all: the persons involved would not necessarily work if work were available. In these circumstances the indistinct line separating these cases from the working force is not primarily a defect of the concept of "customary occupation," but reflects the facts of the real situation.

Other uses of such data are not necessarily impaired by this circumstance. The bias toward over-stating the number of working persons did not vary greatly in Taiwan over time, and therefore will not affect comparisons of the same population at different dates, such as those used in this chapter and in Chapter III.

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THE DISPOSITION OF MANPOWER

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In general, activities having to do primarily with livelihood are so important in human societies that they are always subjected to some special forms of coordination. Never are they treated casually in a society, as minor points of etiquette or personal friendship may be. Much of their importance arises from the fact that the same persons who engage in them also occupy other positions of social significance. This coordination, therefore, cannot be primarily a matter of regulation within the realm of economic behavior,[10] but consists of keeping such behavior consistent with the social order. Demographically, the problem is found wherever occupational functions overlap with other roles in the same individuals.

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Two of the commonest regions of overlap in a population are with sex and age. Most of Asia, for example, is beset by such hazards to human existence that its peoples have maintained their numbers only by bringing forth abundant offspring. High fertility, which until recent centuries had been the universal offset to high mortality, has always necessitated a distinct kind of social position for women. Being the only ones capable of parturition, females in these societies come under the influence of family institutions that attach high priority and emphasis to the bearing and rearing of progeny.[11]

This circumstance has profoundly affected the part of women in economic activity. Most of the ways thought proper for an adult woman to have contact with the people beyond her family circle are in a married status. Few women escape marriage. Indeed, it is so normal an event that to pass the age of 25 unwed is considered a serious misfortune. To covet matrimony in vain does not carry with it any of the other possibilities (such as occupational careers) that exist in Western societies, and becomes a matter of anxiety if not humiliation for an entire family.

All this does not mean that women under these conditions do not work. The lot of a "home-maker" is a more laborious one in agrarian than in industrial countries, and may encompass more different sorts of particular activities from case to case. A wide range of tasks, including production of many physical commodities, is conducted as

[10] If it were, it would cease to present any problem, for it could be reduced simply to bureaucratic patterns of large-scale organizations.

[11] This does not mean that the particular family institutions are everywhere the same: such societies have long been renowned for the variety in such matters as marriage ceremonies, types of education of children, adolescent behavior and the division of labor in specific household tasks. We are not here concerned with superficial variation, but with the general features which are shared.

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659 462 a matter of course within the households that finally make use of them—items which in industrial societies are ordinarily purchased in the market. In these activities women are occupied often from childhood to old age, and sometimes more vigorously than men. It is this economy of the household, and not real inactivity, that utilizes the efforts of females in useful pursuits but provides against their holding extra-familial occupations.

We can be certain that a goodly portion of the work done in Taiwan was concealed in the activities of women. When such is the case, estimates of manpower based on occupational data are necessarily distorted, especially when these data have been compiled without overt care to this problem. Here the only feasible procedure in measuring manpower is to exclude altogether this important segment—womanpower—and to concentrate only on the "male labor force" as representing the dominant working patterns of the population.

659 Even within the male population, however, not all of its members are eligible or able for permanent employment. Close to half of all males in Taiwan—practically all those without occupations—were consistently of ages in which employment was not customary. Age always has a great deal to do with whether a person follows an occupation or not, and often with the sort of work he may perform. Tasks that are looked upon as useful are commonly ones that infants and the aged, for example, lack the capacity for doing. In between these extremes, some males of certain ages are excluded from the labor force when sufficient value is attached to other activities such as school attendance, acquisition of special skills, patriarchy, or infirmity—either due to priority of the competing activities themselves (regardless of who performs them) or due to the kinds of persons involved.

These various factors determining employment are so closely associated with age that at any one time almost all of the men of young and middle adulthood in a population have some occupation. The exclusions are concentrated in the years of childhood and old age. For this reason it is meaningful to speak of the "population of working ages," and often more information is available about them as a whole than about the labor force itself.

The Labor Force in Taiwan

162 464 Let us continue this line of inquiry by inspecting the portions of the population that are employed in relation to sex and age. With

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CHAPTER V

Migration and the Growth of Cities

DEPENDING on the way one looks at it, the history of colonial rule in Taiwan can give the appearance either of having brought great transformations to the island or of having left the indigenous social structure virtually intact. This apparent contrast comes from shifting attention between the two principal groups of people that were involved—from the Japanese, who had little to do with the archaic customs and usages of the population, to the Taiwanese, who had only small acquaintance with the modern changes that were being introduced. Here we shall be concerned with those of the latter who came into contact with the new elements.

Though the full force of these developments passed them by as a group, the Taiwanese were not all uninfluenced. The organization of farming, to be sure, continued as before with little modification. The activities most affected were those outside of agriculture. Hence the people must have moved to the new conditions, since the innovations did not move to them.

The Territorial Frame of Migration

Taiwan is a small island, and recording the migration of its people should not be a task of great magnitude or difficulty. Japanese regarded such a record as essential in keeping a close watch over the population. It was so important that they inaugurated continuous population registers for every village, every group of households. These reports were compiled in fine detail by the authorities and published in a single volume each year.[1] A certain amount of adaptation is needed to make these registers answer questions that are germane to our interests.

Japanese conquest began to provide not only the first reliable data for assessing movement in the population, but also a new type of control over it. It put an end to the historic influx of people from China that had been responsible for populating most of the island.

[1] The data proved to be more efficient for their purpose than for ours. The system faithfully counted the arrival of new persons in a community (the most important information from the standpoint of regulation) but did not expunge the records of all persons who left. The result was a more or less consistent bias toward *over*-estimating the number of people living in a given locality, and of course a somewhat distorted view of total migration.

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On a much smaller scale, Japanese replaced Chinese as immigrants. Chinese arriving from the mainland were given a distinct legal status as aliens. Their activities were restricted, and they were no longer allowed to merge with permanent Taiwanese residents. Practically all movement by Taiwanese thenceforth consisted of internal migration, redistributing the population that was already there.

Only a part of the island is level enough to have encouraged heavy agricultural settlement; almost half of the total area is more than 500 meters above sea level. For administration, and therefore for the census, Taiwan was separated from 1920 on into seven main divisions. Two of them, plus an eighth for P'enghu (the Pescadores Islands) off the West coast, were technically under a different sort of political organization; but for convenience we shall refer to all eight as *Prefectures*.[2] Most types of census and registration statistics were tabulated for each of these political units as well as for the total island.

Beneath the level of Prefectures, local administration was organized around a set of Districts and a smaller number of Municipalities. In the population statistics, these formed two parallel units: no District contained a Municipality, and both were subordinate to Prefectures.[3] There were seven Municipalities at the census date in 1930, raised to nine before 1935, and 53 Districts in both years; in comparisons of different years, all will be standardized to the arrangement in 1935. Inside each District were towns and villages. Few materials are available for these individually; for most purposes the smallest divisions that can be studied are the Districts.[4]

Finally, the mountainous interior region—the Aborigine Terri-

[2] If not literally accurate, the term is appropriate in that authority below the Government-General was highly centralized in the subordinate governors of these divisions. How they are designated here is a matter of no consequence, as it made little difference in the actual administration. P'enghu, scarcely known to Westerners except as the Pescadores Islands, was in 1926 made a separate division under the Government-General. Prior to this it had shifted between separate status and a subdivision of Kaohsiung Prefecture. Hence there is no unbroken series of data for it.

[3] Again, the details of political organization were not uniform, but that need not concern us here. Both terms are arbitrary: "District" for the term *chün* (in its Chinese reading), and "Municipality" for *shih*. It was the practice to form new municipalities by removing some important town of sufficient size as a unit from its surrounding District, sometimes adding some former villages, also intact. This practice gives a basis for identifying the population of cities for comparison over a period when such administrative changes were taking place.

[4] The area of towns and villages exhausted the entire area of Districts, leaving no space between their boundaries. Therefore they do not always refer to meaningful units of settlement, and the terms are not consistent.

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tory—was put under special control (though it nominally fell inside some part of each prefecture). This area must be considered as a separate division of the island. Its actual conditions and the quality of its population data are distinct from the remainder. Japanese were secretive about their treatment of the Aborigine Territory, and we have little information about it that is dependable.

These civil divisions were the outcome of some experimentation in government administration. The scheme just described was put into essentially its final form in 1920. Accordingly, most comparisons involving internal boundaries cannot be carried back beyond that year.

The Distribution of Total Population and of Migrants

In 1930, the population of Taiwanese was divided among the Prefectures as indicated in Table 19. Data in this form do not readily

TABLE 19

TOTAL POPULATION OF TAIWAN, 1930

By Prefecture, Inside and Outside the Aborigine Territory

(All Ethnic Groups)

	Area of Regular Administration			*Aborigine Territory*		
Prefecture	*Population*	*Density: Persons Per Sq. Km.*	*Density As % of Average For Total Island*	*Population*	*Density: Persons Per Sq. Km.*	*Per Cent*
Taipei	896,380	328.0	141	17,151	9.4	4
Hsinchu	641,479	243.9	105	23,232	11.8	5
Taichung	990,571	279.3	120	24,975	6.5	3
Tainan	1,155,287	233.9	100	4,359	9.0	4
Kaohsiung	601,547	210.5	90	31,772	11.1	5
Taitung	46,182	46.2	20	12,619	5.0	2
Hualien	72,555	53.7	23	14,304	4.4	2
P'enghu	60,124	473.9	204	—	—	-
Total Island	4,464,125	232.7	100	128,412	7.6	3

Source: *Census of 1930, Statistical Tables*, Table 11.

reveal relative concentration and dispersion of people. The real centers of population, if we disregard for a moment the dense settlement in the largest cities, were in portions of Taichung and Tainan

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tation were confined to some of the major cities, the influence of these broader health measures gradually spread evenly over most of the island. In this way Japanese gained results that were very substantial through the use of none but crude techniques.

The Japanese policy toward opium addiction was less consistent, for here they found welfare goals to be in conflict with profit motives. They made the manufacture of opium a government monopoly, and closely regulated its sale. The announced purpose for this control was to eradicate the use of the drug, but the Taiwanese occasionally complained that officials secretly abetted its consumption. The truth of the matter is not clear, but their success in other tasks suggests that opium addiction could have been stamped out far more quickly if they had made a determined effort to do so. Some of their own records show that new users of opium were being granted licenses as late as the 1920's. It is likely that the Japanese appreciated the effectiveness of addiction in enervating the resistance to their rule among wealthy families, and they made no secret of the steady public revenues that they derived from opium sales.[12]

The Evidence for Measurement of Mortality

There is not much point in describing the purposes and methods of public health work without having some independent appraisal of results. Such efforts have often been sponsored elsewhere with much fanfare and little accomplishment. The only trustworthy way to view the results of economic and sanitation policies in prolonging life is through some form of measurement; this is likewise the only precise way of comparing the risks of death in Taiwan and in other areas.

Fortunately the data that exist to gauge mortality in Taiwan are excellent. The occurrence of many kinds of illness involving danger of contagion was required by law to be reported to the authorities. Partly as a means of avoiding contamination of the living by the dead, and partly just as a means of tightening official control over the reporting of disease, the Japanese also strictly regulated burials and cremations.[13] The rigors of enforcing these rules led to concealment of some illness and evasions by mis-stating exact causes of

[12] A careful study of opium addiction in Taiwan and its relation to mortality is contained in Tu Tsung-ming (1935 and 1938).

[13] See Hsü Tze-wei (1946), p. 449.

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death;[14] but at the same time they led to registration of deaths that was virtually complete.

A person while living had a legitimate civil status only by being entered in an appropriate police register. Deceased, his absence could be legitimized only by removal from these rolls, and his burial could be permitted only by following this prescribed procedure. All of these records were kept by the police or by affiliated agencies. The police were alert and well-deployed to prevent evasions. Since such records were useful to them in surveillance of the population, they employed the *pao-chia* system to make the registration effective. The people in each locality were thus compelled to accept conformity with these requirements as a matter of their own collective interest. Consequently a person's identity in these records from birth till death was almost never subject to confusion or concealment.

This consistency of information in all the population registers has a special significance for demographic research. It means, for example, that each person's death record was matched to the record of his birth, so that the exact number of years elapsed between the two events can be calculated. The same legal identity of a person formed the basis for his entry in every census enumeration. "Age," as a census category, was not set down according to an individual's recollection of the number of birthdays experienced. Instead, the pertinent fact that was entered was his date of birth, and age was ascribed to him in the process of tabulation at the central census office.

Age in Taiwanese population statistics was therefore explicitly defined: it was a classification of equal intervals, in which each person ideally had one and only one "true" position at a time. It was possible for age to correspond perfectly in the recording of all three kinds of events of interest here—birth, enumeration at census date, and death. An unambiguous scheme of this sort for reckoning age is especially important in a population of Chinese, because most Chinese compute their ages in a manner that cannot be reconciled to Western usage. Starting with age one at the date of birth, it is customary for them to add a year of age with the passage of every (lunar)

[14] Once cases of smallpox, scarlet fever, typhoid fever and certain other diseases were discovered, the people were forced to undergo disinfection of lodgings and personal effects that was often destructive. Hence, it has been alleged that diagnoses were deliberately falsified to avoid these consequences (see OPNAV, Civil Affairs Handbook, 1944, *Shinchiku Province*, p. 54; U.S. War Department, TB Med 30, p. 6). A more important source of inaccuracy was probably (in the case of deaths) ignorance as to the nature of a decedent's illness. Tuberculosis was said to be very prevalent, and yet few deaths were ever diagnosed as due to this cause.

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New Year thereafter. The Japanese system of ascribing age completely avoided bias from this source.

Moreover, in this system the year of age that a person occupied at any date did not depend on his personal conception of it at the time. Such subjective conceptions of age often do not change through an individual lifetime exactly as "true" age does. Misstatement of age is always a source of error in census procedures that rely on people to report their own ages directly. The recorded ages of people in Taiwan at census dates and at death were determined at the date of birth. If the birth had been registered on the proper date, it was next to impossible for the reporting of age in a census enumeration to be incorrect. Even when the date of birth was reported wrongly, there was strong pressure to be consistent later when reporting it in the census and at death. For purposes of constructing life tables, the system thus made an automatic adjustment for these errors by shifting the age at death by exactly the same amount.[15] Decedents at a given year of age were registered according to the particular calendar year in which they were born; persons enumerated in a census of the same year at the same age were the survivors of births in that prior calendar year, from January to December. It follows that both registered deaths and census of population belonged to the same group of people. With these two figures, it is a simple problem in arithmetic to compute the number of persons who entered that year of age, the number who died before reaching the next higher age, and the proportion who died out of the first group.[16] This proportion is the most important element in the construction of life tables, and it places Taiwan's mortality data in this respect among the most remarkable that exist. The applications of this special feature are discussed in the next section.[17]

[15] The census of 1905 enumerated Taiwanese with birth dates as far back as the year of Meiji Restoration and earlier. Though evidence like family records and land titles were often called upon by the authorities in order to substantiate this information, some inaccuracies must have been present. They could not have been numerous, for they do not appear as "heaping" in census age distributions of people.

[16] Of course, the census population must be brought up to December 31 if the census was taken earlier (which has always been the case in Taiwan). Also, the figure for deaths must be re-constituted from the vital statistics reports of two years, since many of the decedents died later than December 31 of the census year. These two details do not alter the principle explained above.

[17] In the earlier census enumerations, before 1930, age was ascribed by calendar year of birth. Persons born after January 1 in the census year were placed into the first year of age, those born in the calendar year preceding the census into the second, and so on. To this peculiarity of the system we owe the possibility of making accurate early life

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PUBLIC HEALTH AND THE RISKS OF DEATH

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A welcome feature of Taiwan's mortality and census data is that they lend themselves to a detailed test for accuracy. First, they can be checked against the number of people counted in one census who died before the next one. For any given cohort of births, if the data are all correct, this should be equal to the number of survivors counted in the earlier minus the number counted in the later census. The censuses of 1905 and 1920 are compared in these terms in Table 34, for males only; the result is almost identical for females. The column of ratios indicates the degree to which registered deaths account for the difference in the numbers of survivors counted at successive census dates.

If all records were complete and accurate, the ratios would be unity at every age. If the differences in census survivors are assumed to be correct, then apparently a few deaths went unregistered in certain years. It is obvious that the records were not perfect. As it is, they were so nearly complete that there is little if anything to be gained from trying to make corrections for the discrepancies. Since this is simultaneously a test of census enumeration and vital registration (and an extremely sensitive test of age reporting), it is not possible to decide whether the discrepancies arose from deaths that were omitted or people overlooked from the earlier census.[18]

Since mortality in the first year of life is usually measured on the basis of the number of live-born babies, it is necessary also to know how adequate the birth statistics were in relation to death and census records. A test for births, similar to that above, is shown in Table 35; the results give an excellent account of the birth registration. The registration of birth entered a child permanently in the police lists, and was an almost inescapable bond during his later life. By this criterion, the chances of evading su[illegible]ent controls allied to

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tables for Taiwanese, for the yearly intervals had the same upper and lower limits as those of the vital statistics.

Japanese were apologetic about the deviation of this system from the Western mode of age reporting, and beginning with 1930 "modernized" the system so that its special virtue was eliminated. Starting with the census of that year, census-year rather than calendar-year intervals were used, making the system identical with the Western conventions in design. For dates after 1930 it is no longer possible to relate deaths precisely to enumerated census population.

[18] There is reason for not putting all the blame on registered deaths, for the area of effective administration was expanded slightly after 1905, and by 1915 and 1920 had brought more people into the registration and census system than the survivors of those enumerated in 1905. This being the case, it is possible that both measuring instruments were nearly perfect, and that the discrepancies arose entirely from the expansion of administration.

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TABLE 34

TEST FOR ADEQUACY OF DEATH REGISTRATION OF TAIWANESE 159 165
Males by Year of Birth, Surviving at Census Dates in 1905 and 1920, and Intervening Deaths as Registered

Year of Birth	*Survivors 1905*	*Survivors 1920*	*Difference*	*Registered Deaths 1905-1920*	*"Completeness" of Death Registration**
1904	48,859	38,257	10,602	11,602	1.094
1903	43,432	35,769	7,663	7,768	1.014
1902	43,340	36,392	6,948	6,718	.967
1901	41,658	35,523	6,135	6,087	.992
1900	41,910	36,224	5,686	5,564	.979
1899	38,149	32,899	5,250	5,099	.971
1898	40,913	35,409	5,504	5,257	.955
1897	34,183	29,707	4,476	4,801	1.073
1896	33,855	29,149	4,706	4,872	1.035
1895	35,579	30,148	5,431	5,177	.053
1894	32,338	27,187	5,151	5,052	.981
1893	32,581	27,062	5,519	5,444	.986
1892	34,122	27,945	6,177	6,224	1.008
1891	32,421	25,963	6,458	6,263	.970
1890	31,626	24,672	6,954	6,540	.940
1889	32,164	25,479	6,685	7,273	1.088
1888	34,355	25,907	8,448	8,040	.952
1887	35,471	27,101	8,370	8,584	1.026
1886	33,697	25,254	8,443	8,587	1.017
1885	33,445	24,708	8,737	9,016	1.032
1884	36,969	27,156	9,813	10,023	1.021
1883	34,750	25,257	9,493	9,911	1.044
1882	32,431	23,034	9,397	9,922	1.056
1881	35,951	25,034	10,917	11,100	1.017
1880	31,335	21,484	9,851	10,242	1.040
1879	31,345	21,230	10,115	10,287	1.017
1878	29,016	19,036	9,980	9,961	.998
1877	27,669	18,379	9,290	9,988	1.075
1876	31,238	20,263	10,975	11,239	1.024
1875	27,991	17,880	10,111	10,741	1.062

* Ratio: Deaths/Difference.

Sources: *Census of 1920, Descriptive Report*, Appendix, Table 15.
Vital Statistics, yearly volumes, 1906-1920.
Statistical Summary, Table 58, for population by age in 1905.

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TABLE 35

TEST FOR ADEQUACY OF BIRTH REGISTRATION OF TAIWANESE Births from 1906 to 1920, as Registered and as Estimated from Survivors Enumerated in Census of 1920 and Intervening Deaths

Year of Birth	Survivors 1920	Registered Deaths Since Birth	Estimated Births (1) + (2)	Registered Births*	"Completeness" of Registered Births†
			Males		
1920	46,832	7,725	54,557	54,064	.9910
1919	55,006	12,993	67,999	70,349	1.0346
1918	52,260	18,219	70,479	71,764	1.0182
1917	52,245	19,854	72,099	73,430	1.0185
1916	46,234	19,805	66,039	65,837	.9969
1915	48,109	22,322	70,431	70,855	1.0060
1914	49,637	23,109	72,746	72,755	1.0001
1913	48,427	21,550	69,977	70,170	1.0028
1912	48,810	20,961	69,771	69,990	1.0031
1911	48,388	21,159	69,547	69,558	1.0002
1910	46,609	20,806	67,415	68,042	1.0093
1909	44,540	20,780	65,320	65,666	1.0053
1908	41,626	20,353	61,979	61,993	1.0002
1907	43,003	20,074	63,077	63,290	1.0034
1906	41,598	20,008	61,606	62,120	1.0083
			Females		
1920	46,017	5,815	51,832	51,410	.9919
1919	53,950	10,346	64,296	66,358	1.0321
1918	50,328	16,028	66,356	67,701	1.0203
1917	49,315	18,099	67,414	68,984	1.0233
1916	44,230	18,658	62,888	62,768	.9981
1915	45,348	21,372	66,720	66,814	1.0014
1914	46,245	22,279	68,524	68,695	1.0025
1913	45,434	21,281	66,715	66,797	1.0012
1912	45,403	21,090	66,493	66,632	1.0021
1911	45,373	20,805	66,178	66,100	.9988
1910	43,251	20,262	63,513	64,099	1.0092
1909	41,268	20,187	61,455	61,620	1.0027
1908	38,292	19,737	58,029	57,807	.9962
1907	38,594	19,981	58,575	58,466	.9981
1906	37,323	19,824	57,147	56,987	.9972

* In 1920, deaths and births have been taken only from January 1 to October 1.
† Ratio: Registered Births/Estimated Births.
Sources: *Census of 1920, Descriptive Report*, Appendix, Table 15.
Vital Statistics, yearly volumes, 1906-1920.

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the registration system were very slight. The same result is found for births of more recent years.

With very few exceptions, these events—births, deaths, and presence at each census date—were nearly all recorded and were recorded accurately. The pattern of omissions is itself significant: whatever their source, they contained practically no age or sex bias. Therefore (with one reservation)[19] we shall accept all published deaths and all population figures as complete and correct for the measurement of mortality. The differences would be trivial if they were distributed as adjustments over all the years of deaths; and the tests give no clue as to how such adjustment should be distributed.

The Decline of Mortality

The simplest question that arises about the trend of Taiwanese mortality is also the easiest to answer: what happened to the prevalence of deaths in the population during colonial rule? Unfortunately for judging this trend, no one can say what was the level of mortality in Taiwan when the Japanese first arrived. The Manchu government did not even know the number of its subjects, far less their behavior with respect to births and deaths. The colonial regime founded by the Japanese started a thorough system of vital statistics only after a decade of control. Consequently the very earliest usable record began at a time when life had already been made more secure.

The trend of annual death rates after 1905 appears clearly in Table 36. It was not only downward, but was rapid in its fall. Over the same period there were scarcely any recorded instances to equal the speed of this decline. Supposing that there were over 40 deaths per thousand persons in 1895 and before, the yearly incidence must have dropped by more than one-half in the next fifty years.

Thanks to improved drugs and newer approaches to the problems of health, such a feat has since this time become fairly easy in countries of high mortality. Crude death rates of 20 are no longer considered low. But subsequent advances in medicine should not be allowed to detract from this performance. With the resources and

[19] The only reservation is in the case of infants. This requires special attention, and is discussed in the section on infant mortality.

In reality, the ambiguity is a more fundamental one than any amount of "correction" can remedy. It arises from an inherent difficulty in making a precise definition for a "live" birth in a society where infants are delivered without skilled medical care and where the chances of surviving the first day of life are very poor. Where families regard mere discussion of deceased offspring as inauspicious, the prospects for developing precise measuring standards for infant mortality are poor.